

Mr. W. A. R. Rawle, special meteorological observer at Roseau, furnishes the barogram reproduced as figure 1. Special interest attaches to this barogram, because it is typical of cyclones of extremely small diameter and rapid movement such as passed over Porto Rico, as detailed in the preceding paragraph. After passing to the westward of Jamaica on the 31st this storm was evidently dissipated over the Yucatan peninsula on September 1.

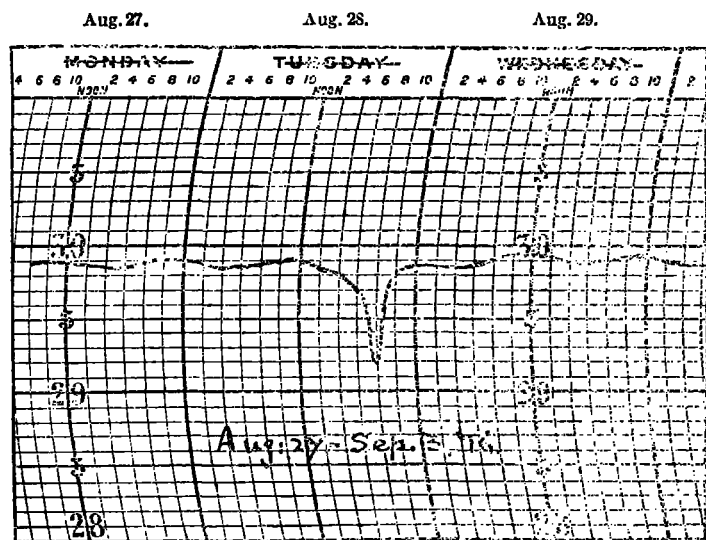


FIG. 1.—Barogram at Roseau, Dominica, Aug. 27-29, 1916.

Valuable reports of the cyclone of the 12th-18th were received by wireless from vessels of the United Fruit Co., especially the *Tenadores* and *Turrialba*, the former passing northward over the western Caribbean on the 16th and cutting the path of the hurricane at right angles and slightly to the rear of its center.

#### DISTRICT WARNINGS DURING AUGUST.

*Chicago district.*—Frost warnings were issued on the 13th and 27th for the entire cranberry marsh region of Wisconsin; for the marshes in central Wisconsin on the 26th; and on the 11th and 29th for the marshes of northwestern Wisconsin.

Fire-weather warnings for Minnesota were issued on August 9 and 10.—*Chas. L. Mitchell, assistant forecaster.*

*Denver district.*—The only warning issued during the month was that for frost in high places in Utah on the 18th.—*Frederick W. Brist, Assistant Forecaster.*

*New Orleans district.*—A small disturbance was central off the mouth of the Rio Grande Valley at 8 p. m. on August 5, and northeast storm warnings were ordered for the Texas coast stations at 8:30 p. m. The storm moved westward into Mexico and its passage was attended by storm winds on the Texas coast.

The only other feature of interest in this district during August was the tropical disturbance which moved inland near Corpus Christi, Tex., on the 18th.

Advisory warnings were received regularly on and after August 13 giving the location, probable intensity, and course of movement of the tropical disturbance.

On August 16 all vessels bound for the Yucatan Channel and Cuban ports were advised to delay sailing on account of the following advisory warning:

Advisory warning, 10 a. m. Tropical disturbance apparently central about 200 miles south of central Cuba, moving west-northwest. Storm is of greater intensity than indicated by earlier reports. It will doubtless reach the Yucatan Channel Thursday. Vessels bound for those waters should exercise caution.—*Henry.*

Advisory warnings were distributed on the 17th, and vessels were advised to delay sailing until further advised. Up to the night of August 17, 12 vessels, which had cleared from New Orleans, had anchored in the river in the vicinity of Pilottown and 8 to 10 steamers came into the river from the Gulf of Mexico to await further advices from the Weather Bureau, so that about 20 steamers were at anchor waiting for advices that it would be safe to proceed.

On August 18 the following warnings were issued:

Hoist northeast storm warnings, Texas coast, 7:40 a. m. Tropical disturbance probably moving north of west in west Gulf. Increasing winds with northeast gales and high tides to-day and to-night. Vessels bound from New Orleans to Cuban and Central American ports may proceed.—*Cline.*

Change to hurricane warnings 8:30 a. m., Corpus Christi to Brownsville. Center of disturbance as yet probably some distance east of western Texas coast.—*Henry.*

Some of the 20 vessels held at New Orleans would have encountered the hurricane in the Yucatan Channel and might have met the same fate as the *Admiral Clarke*, which was lost on the night of August 16. Vessel masters and agents who held their vessels until the routes were safe express the highest commendation for the manner in which the Weather Bureau kept them advised.—*I. M. Cline, District Forecaster.*

*Portland (Oreg.) district.*—August was, as usual, a quiet month in this district. Not so much rain fell as usual, but notwithstanding this fact there were few forest fires. No storm or small-craft warnings were issued and none was needed.

Fire-weather warnings were issued on the morning of the 19th, continued on the morning of the 21st, and concluded on the morning of the 23d. This series of fire warnings was the first issued this season; ordinarily it is necessary to issue them early in July.—*E. A. Beals, District Forecaster.*

*San Francisco (Cal.) district.*—Usually August is a very quiet month in this district and freer from rainy and unsettled weather than any other month. But August, 1916, was notable for the many periods of showery and unsettled weather in all sections. Warnings of showers were issued in southern California for the mountain sections on the 4th, 24th, and 26th, and were verified; but the light showers along the coast on the night of the 23d were not forecast.

In northern California the showers in the San Francisco Bay section on the 14th were not forecast and the warnings issued on the morning of that date were verified only in the mountain sections. The warnings issued on the 27th and 28th were verified in both northern California and Nevada.—*G. H. Willson, District Forecaster.*

*A special chart showing the hurricane tracks of the season of 1916 will be published in the December issue of the REVIEW.*

#### EXTENSIONS OF U. S. WEATHER BUREAU SERVICE.

The agricultural appropriation act for the fiscal year ending June 30, 1917, was approved by the President on August 11, 1916. It appropriates \$24,948,852 for continuing the work of the department and carrying out new legislation. This is an increase of \$1,977,070 over the appropriation for the fiscal year 1916; but this total does not include \$600,000 for printing and binding and a number of larger sums for many other specially indicated purposes.

The appropriation for the Weather Bureau is \$1,747,260, an increase of \$81,210 over the appropriation for 1915-16.

Of this increase \$30,000 will be used in extending the weather and storm-warning service in the vicinity of the Panama Canal and various points in the Caribbean Sea and Gulf regions. The number of points from which reports of hurricane conditions are obtained will be increased, thereby making possible the earlier and more complete preparation and dissemination of warnings of the approach of these destructive storms.

The extension of the service, in addition to its value to the residents of the Southern States, it is believed, will be of increasing value to the ships using the Panama Canal. The Weather Bureau also will be able to issue for southern waters, forecasts of general wind and weather conditions and their changes from day to day. These should be of special value to marine commerce passing to and from the canal. These warnings will be transmitted, as in the past, to ships at sea by wireless telegraphy in cooperation with the naval communication stations at Radio, Va., and Key West, Fla.

An increase of \$10,000 permits the establishment of additional stations and the better organization of weather observation work in Alaska. Telegraphic observations and reports which have important bearing on the preparation of general weather and storm forecasts for the United States are secured from the region. Additional data to determine and establish the climatic conditions of this great region with its growing agricultural and commercial interests also will be collected.

A further increase of \$10,000 will be used in extending the river and flood service and the frost-warning service.

The new act also contains provision for a new Weather Bureau building at Cape Henry, Va., one of the most important coastal stations of the Weather Bureau. The new building will be erected at a point commanding a full view of the fairway of vessels, which will greatly facilitate its usefulness in observing and reporting the vessels passing in and out of the Capes.—*C. C. Clark, Assistant Chief.*